IQeye Alliance-pro Series, IQA32WI, IQA32WE, IQA32WX
H.264, HD1080p, Color Indoor/Outdoor Vandal Resistant Network Dome Camera with Integrated Autofocus or Varifocal Lens

PART 2 – PRODUCTS

2.1 MANUFACTURER

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2.2 DESCRIPTION

The product specified shall be an all-in-one vandal/tamper resistant HD1080p resolution color dome camera designed for indoor/outdoor applications providing multiple H.264 (MPEG4, Part 10) and simultaneous MJPEG streams that can be individually configured. The dome camera was designed to provide 30fps at maximum resolution with audio, and shall conform to the ONVIF and PSIA standards.

The camera uses a Wide Dynamic Range (WDR) sensor for enhanced image dynamic range and DTS (Direct-To-Storage) recording. The camera offers Day/Night functionality with high sensitivity for use in low light indoor/outdoor applications, and is prepackaged with an autofocus or varifocal IR corrected lens to allow zoom and focus adjustment. The dome camera is constructed of cast-aluminum housing with polycarbonate dome bubble and auto tracking inner liner. The dome camera was designed to protect against water and dust to IP66 / NEMA 4 standards. Requiring low power the dome camera is PoE (IEEE 802.3af) compliant, and can be powered from 12-24VDC or 24VAC.

2.3 GENERAL REQUIREMENTS

A. The IP dome camera shall be a high impact aluminum, vandal resistant, Day/Night color dome camera with a progressive scan CMOS sensor.

B. The IP dome camera shall utilize a CMOS sensor that is 1/3-inch with a dichroic infrared mirror capable of producing HD1080p resolution.

C. The IP dome camera shall have no less than 1920(H) x 1080(V) pixels.

D. The camera shall be H.264 (MPEG 4, Part 10) compliant.

E. The IP dome camera shall provide dual-codec functionality for simultaneous H.264 (MPEG 4, Part 10) and MJPEG video streaming.

F. The IP dome camera shall use Main Profile (MP) for mainstream consumer broadcast and storage applications.

G. The IP dome camera H.264 encoded video stream shall support full real time video frame rate of 30fps at a maximum resolution of HD1080p (1920 x 1080).

H. The IP dome camera MJPEG encoded video stream shall support full real time video frame rate of 30fps at a maximum resolution of HD1080p (1920 x 1080).

I. The IP Dome camera shall have three video streams that can be individually configured for H.264 and MJPEG from the webpage and API interface.

J. The IP dome camera shall have three video streams that can be independently configured for different resolutions.

K. The IP dome camera shall have bit rate control over the individual H.264 image stream that can be configured from the webpage and API interface.

L. The IP dome camera shall have a selectable bit rate up to 11 Mbps for the individual H.264 image stream that can be configured from the webpage or API interface.

M. The IP dome camera shall have quality control over the MJPEG image stream with four selectable quality values from the webpage interface.

N. The IP dome camera shall have quality control over the MJPEG image stream with 86 selectable compression values from the API interface.

O. The IP dome camera shall have a configurable virtual camera window that can be any portion of the field-of-view acting like an independent camera with configurable resolution and frame rate.

P. The IP dome camera shall conform to the ONVIF standard.

Q. The IP dome camera shall conform to the PSIA standard.

R. The IP dome camera shall be Power over Ethernet (IEEE802.3af Class1) compliant for indoor/outdoor applications.

S. The IP camera shall offer an optional integrated 3 – 8mm autofocus megapixel lens (A3) with F1.3, and 1 / 2.7" optical format.

T. The IP camera shall offer an optional integrated 9 – 22mm autofocus megapixel lens (A2) with F1.5, and 1 / 2.7" optical format.

U. The optional autofocus lens (A2 & A3) shall be remotely controlled through the user interface simplifying the focusing process during the installation.

V. The optional autofocus lens (A2 & A3) shall have a remotely controlled zoom through the user interface.

W. The IP dome camera shall have an integrated 3-13mm megapixel IR corrected varifocal lens with F1.4, and 1/3" optical format.

X. The IP dome camera shall provide a cast-aluminum ceiling plate (IQA32NI) or cast-aluminum back box housing (IQA32NE & IQA32NX), polycarbonate dome and auto tracking inner liner.

Y. The IP dome camera (IQA32NE & IQA32NX) shall provide protection against water and dust up to IP66 / NEMA4 standards.

Z. The IP dome camera shall be designed to be surface mounted to a wall or ceiling and wall mounted with optional accessories.

AA. The IP dome camera shall be designed to be mounted to a single or double gang outlet box.

BB. The IP dome camera shall have a 3-axis gimbal providing 360˚pan, 90˚ tilt and 350˚ azimuth for easy camera positioning.

CC. The IP dome camera minimum illumination requirement to produce an image in color mode will be 0.20 lux (0.02 fc) with an F1.4 lens.

DD. The IP dome camera shall provide an automated IR filter that will automatically switch from color to monochrome enhancing low lighting or in applications where IR illumination is utilized.

EE. The IP dome camera shall require less than 0.05 lux (0.005 fc) to produce a monochrome image when in night mode.

FF. The IP dome camera shall be sensitive from 800nm to 940nm IR illumination.

GG. The IP dome camera shall have a feature (Lightgrabber™II) that enhances camera sensitivity by increasing the integration time of the CMOS sensor.

HH. The IP dome camera shall provide automatic white balance, automatic exposure, gain control, electronic shutter, and backlight compensation.

II. The IP dome camera shall provide user configurable saturation, contrast, brightness, and sharpness controls from the web-interface.

JJ. The IP dome camera shall provide four fully configurable motion detection areas with adjustments for sensitivity and size to detect motion in various lighting conditions.

KK. The IP dome camera shall have user configurable access hours to limit access to the camera video streams based on weekdays and or weekends.

LL. The IP dome camera shall provide a video flip and rotate function to allow the image to be digitally rotated 180 degrees, or to flip the image horizontally or vertically.

MM. The IP dome camera shall have an analog service port that can be configured for NTSC or PAL (1Vp-p) for installation and setup of field-of-view and focus.

NN. The IP cameras shall have a continuous analog video output that can be configured for NTSC or PAL (1Vp-p) video formats.

OO. The IP dome camera shall provide selectable AC Lighting control for 50Hz or 60Hz lighting.

PP. The IP dome camera shall transmit full duplex, bi-directional (two-way) audio that is synchronized with the H.264 video stream.

QQ. The IP dome camera shall support DTS (Direct-To-Storage) for recording of time lapse and event recording using network attached storage.

RR. The IP dome camera shall have a physical I/O with 1 input and 1 output that can be configured as normally open (NO) or normally closed (NC).

SS. The IP dome camera shall support on camera storage of time lapse and event recording using micro SD Class 6+ media or higher.

TT. The IP dome camera shall have an event handler allowing the camera to send an image or video clip to on-camera storage, FTP site, email address, and or network attached storage when receiving an internally or externally generated event.

UU. The IP dome camera shall support the following licensed On-Camera IQapps.

1. IQaccess: Software that enables multiple users to receive alerts via a pop-up window when the camera receives a hardware or software trigger.

VV. The IP dome camera shall be video analytics ready.

WW. The IP dome camera shall be FCC Part15 Class B, CE, and RoHS compliant.

2.4 NETWORKING REQUIREMENTS

A. The IP dome camera shall incorporate a built-in web server allowing full control and configuration of the camera.

B. The IP dome camera shall be Power over Ethernet (IEEE802.3af Class1) compliant (IQA32NI & IQA32E), or (IEEE802.3af Class 2) compliant (IQA32NX).

C. The IP dome camera shall have a 100 Mbps Ethernet RJ-45 connection that can deliver data at a maximum rate of 35 Mbps.

D. Ethernet:

1. 10Base-T/100 Base-TX
2. Auto-sensing
3. Half/Full Duplex
4. RJ45

E. The IP dome camera shall provide integrated support for TCP/IP, HTTP, HTTPS, DHCP, UDP, RTP, RTSP, DNS, ARP, ICMP, NTP, UPnP, ZeroConf, APIPA, UDP multicast, SNMP, FTP, SMTP, Telnet, and CIFS protocols.

F. The IP dome camera shall have RTSP (Real Time Streaming Protocol) support for compatibility with media players such as VLC Player, Apple QuickTime, Windows Media Player, and Core Player.

G. The IP dome camera shall deliver HD1080p quality video at a frame rate of 30fps via TCP/IP over CAT5 or CAT6 cable.

H. The IP dome camera shall not require unique or proprietary client software for viewing or controlling the camera.

I. The IP dome camera shall conform to the ONVIF and PSIA standards.

J. The IP dome camera shall be available to users running versions of Internet Explorer™, Firefox™, Safari™, Chrome™, Opera™, or Mozilla™.

K. The IP dome camera shall provide secure user and administrator password protection.

2.5 SENSOR

A. Type: CMOS 1/3-inch, Rolling Shutter, Wide Dynamic Range

B. Megapixel Rating: 2.0 MP

C. Active Pixels: 1920 x 1080

D. Bayer RGB filter

2.6 VIDEO

A. Maximum Resolution: HD1080p – 1920 (H) x 1080 (V)

B. Shutter:
   1. Automatic /Programmable/ Fixed
   2. Rolling Shutter

C. Day/Night: Auto, Color, Monochrome

D. Sensitivity:
   1. Color: 0.2 lux (0.02 fc) with an F1.4 lens

2. Monochrome: Less than 0.05 lux (0.005 fc) with an F1.4 lens

E. IR Range (nm): 800 to 940

F. Dynamic Range: 70dB

G. Exposure: User configurable

H. White Balance: AWB (Automatic) & User programmable

I. Backlight Compensation: Auto

J. Saturation: User configurable

K. Contrast: User configurable

L. Brightness: User configurable

M. Sharpness: Four levels, User configurable

N. Gain Control: AGC (Automatic)

O. Motion Detection: Four windows, User configurable

P. Access Hours: User configurable
   1. Weekdays: On, Off, Timer
   2. Weekends: On, Off, Timer

Q. Analog Service Port:
   1. NTSC / PAL
   2. 1Vp-p

R. Analog Video (continuous):
   1. 2-pin push-in terminal block
   2. Wire range: 20-26 AWG

S. Flip and Rotate: 180˚, Horizontal, Vertical

T. AC Lighting Control: 50Hz / 60Hz, User selectable

U. Camera Name: 16-characters

2.7 IP VIDEO

A. Video Compression Standards:
   1. H.264 (MPEG 4, Part 10)
   2. MJPEG

B. H.264 Profile: Main Profile

C. Network Streams:
   1. Single H.264 or MJPEG stream with configurable frame rate, resolution, bit rate, and quality.
   2. Three simultaneous H.264 streams with individually configurable frame rate, resolution, and bit rate.
   3. Three simultaneous MJPEG streams with configurable frame rate, resolution, and quality.
   4. Three simultaneous streams that can be individually configured for H.264 and MJPEG with configurable frame rate, resolution, bit rate, and quality.

D. Frame Rate:
   1. H.264 & MJPEG: 1, 2, 3, 4, 5, 7.5, 10, 15, 30 fps @ (Maximum Resolution 1920 x 1080).
      i. Frame rate is configurable via the user interface and API.

E. Data Rate:
   1. Up to 11 Mbps for H.264 streams.
   2. 35 Mbps for MJPEG streams with no throttling.

F. GOP structure: Adjustable length (I&P frames).

2.8 OPTICS

A. Autofocus Lens (A2) option:
   1. Lens Mount: ϕ14
   2. Lens Format: 1 / 2.7”
   3. 9 – 22mm
   4. F1.5
   5. IR-corrected
   6. Remote controlled zoom
   7. Auto & remote controlled focus
   8. Fixed iris

B. Autofocus Lens (A3) option:
   1. Lens Mount: ϕ14
   2. Lens Format: 1 / 2.7”
   3. 3 – 8mm
   4. F1.5
   5. IR-corrected
   6. Remote controlled zoom
   7. Auto & remote controlled focus
   8. Fixed iris

C. Varifocal Lens (B5) option:
   1. Lens Mount: M14
   2. Lens Format: 1/3”
   3. 3-13mm,
   4. F1.4
   5. IR-corrected
   6. Manual zoom
   7. Manual (EZ Glide) focus
   8. Fixed iris

2.9 AUDIO

A. The IP dome camera shall transmit full duplex, bi-directional (two-way) audio that is synchronized with the H.264 video stream.

B. The IP dome camera shall have an external microphone / line level input on a push-in terminal block for connecting an external monaural microphone or line level audio source.

C. The IP dome camera shall provide adjustable gain levels for the external microphone / line level audio input.

D. The IP dome camera shall have the ability to enable or disable the external microphone / line level audio input.

E. The IP dome camera shall have an audio output for connecting amplified external speakers on a push-in terminal block.

F. The IP dome camera shall have the ability to enable or disable the audio output.

G. The IP dome camera shall have adjustable gain levels for the audio output.

H. The IP dome camera shall have a push-to-talk button in the user interface.

I. The IP dome camera shall have a mute audio button in the user interface for the push-to-talk feature.

J. Audio compression: G.711 PCM 8 kHz.

2.10 SYSTEM INTEGRATION, CONTROL & CONFIGURATION SOFTWARE

A. DTS (Direct-To-Storage)

B. ONVIF

C. PSIA

D. Web browser

E. IQfinder: Software utility to find IQeye cameras.

F. IQmanager: Camera management & configuration software

G. IQsentry: 4-Channel Camera Management / Recording Software

H. Software Update: Remote programmable Flash ROM.

2.11 ON-CAMERA IQapps

A. IQaccess

2.12 CONNECTORS

A. Network Interface:
   1. RJ45 Ethernet connector (IEEE 802.3af PoE compliant)
   2. 10Base-T/100Base-TX

B. Audio:
   1. External Microphone / Line input:
      i. 2-pin push-in terminal block
      ii. Wire range: 20-26 AWG

   2. External speaker output:
      i. 2-pin push-in terminal block
      ii. Wire Range: 20-26 AWG

C. Input Power:
   1. 2-pin push-in terminal block
   2. Wire Range: 14-22 AWG

D. Physical I/O:
   1. 1 input
   2. 1 output
   3. 4-pin push-in terminal block
   4. Wire Range: 20-26 AWG

E. On Camera Storage:
   1. 1 Micro SD Class 6+ or higher

2.13 ELECTRICAL

A. Input Power:
   a. 12-24VDC
   b. 24VAC
   c. IEEE 802.3af Power over Ethernet

B. Power Consumption:
   a. 3.4 Watts maximum (IQ32NI & IQ32NE)
   b. 5.2 Watts maximum (IQ32NX)

C. PoE Class:
   a. Class 1 (IQA32NI & IQA32NE)
   b. Class 2 (IQA32NX)

2.14 MECHANICAL SPECIFICATION

A. Construction:
   1. Cast-aluminum ceiling plate (IQA32NI)
   2. Cast-aluminum back box enclosure (IQA32NE & IQA32NX)
   3. Aluminum trim ring
   4. Clear scratch resistant polycarbonate dome bubble.

B. Mounting: Surface Mount, Single or double gang outlet box, Wall Mount with accessory.

C. Color:
   1. Enclosure and trim ring: Cool Gray #2
   2. Inner Liner: Black

D. 3-Axis gimbal adjustment:
   1. Pan: 360˚
   2. Tilt: 90˚
   3. Azimuth: 350˚

E. Dimensions:
   1. IQA32NI:
      i. 98.6 H x 146.2 W x 146.2 D (mm)
      ii. 3.88 H x 5.75 W x 5.75 D (in)

   2. IQA32NE & IQA32NX:
      i. 137.6 H x 146.2 W x 146.2 D (mm)
      ii. 5.42 H x 5.75 W x 5.75 D (in)

F. Dome Bubble Diameter:
   1. 98.6 (mm)
   2. 3.88 (in)

G. Weight:
   1. IQA32NI: 746 gm
   2. IQA32NE: 1196 gm
   3. IQA32NX: 1193 gm

H. The IP dome camera shall have solid-state components to resist shock and vibration.

2.15 INSTALLATION

A. Shall contain a full-featured IP dome camera with integrated varifocal lens.

B. Shall be capable of being mounted to a wall or ceiling surface.

C. Shall provide video, control, and will be powered over an Ethernet connection.

D. Shall provide audio input and output on a push-in terminal block.

E. Shall provide multiple language support for English and Chinese.

2.16 ENVIRONMENTAL

A. Temperature rage:
   1. IQA31NI & IQA31NE: -20˚C (-4˚F) to +50˚C (+122˚F)
   2. IQA31NX: -30˚C (-22˚F) to 50˚C (+122˚F)
      i. IQA32NX includes a heater and blower.

B. Operating Humidity range: 10% to 80% non-condensing.

C. Ingress Protection rating:
   1. IP 66
   2. NEMA 4

D. Impact Protection rating:
   1. EN50102, IK 10 (IQA32NE & IQA32NX models)

2.17 ACCESSORIES

A. IQAE-BOX Back Box
B. IQA-WM Wall Mount Adapter
C. IQ800-PMA Pole Mount Adapter

2.18 REGULATORY APPROVALS

A. Electromagnetic Compatibility

1. Emissions
    i. FCC, class B part 15
    ii. EN 55022: 1998 with A1: 2000, A2: 2003; Class A
    iii. CISPR 22: 1997 with A1: 2000, A2: 2002; Class A
    iv. AS/NZS CISPR 22: 2002; Class A
2. Immunity
    i. EN 55024: 1998 with A1: 2001, A2: 2003
    ii. CISPR 24: 1997 with A1: 2001, A2: 2002

B. Safety:
1. EN 60950-1: 2001 with A11: 2004
2. IEC 60950-1: 2001

C. RoHS
1. All material and/or components used in the manufacture of the product shall be in compliance with the EU Directive 2002/95/EC Restriction of Hazardous Substance (RoHS).

2.19 WARRANTY

A. Manufacturer shall warrant the camera (without autofocus lens) to be free from defects in material and workmanship for five years from the purchase date.

B. Manufacturer shall warrant the camera (with autofocus lens) to be free from defects in material and workmanship for three years from the purchase date.